

Claims

1. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ onto a substrate, in a MOVPE technique, where $0 \leq x \leq 1$; comprising the step of reacting together a volatile organotellurium compound, and one or both of (i) a volatile organocadmium compound and (ii) mercury vapour; characterised in that the organotellurium compound is isopropylallyltelluride and in that the substrate is maintained at a temperature in the range 150°C to 350°C .
2. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein the organocadmium compound is an alkyl cadmium compound.
3. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 2 wherein the alkyl cadmium compound is dimethyl cadmium.
4. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein $0 < x < 1$.
5. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein $x=0$.
6. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein $x=1$.
7. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 6 wherein the reaction is carried out in the presence of mercury vapour.
8. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein the substrate comprises glass, or glass coated with indium tin oxide, or CdTe, or CdZnTe, or GaAs, or GaAs/Si, or CdTe/GaAs, or Si.
9. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 1 wherein the temperature of the substrate is maintained at a temperature in the range 150°C to 300°C .

10. A method of depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ according to Claim 9 wherein the temperature of the substrate is maintained at a temperature in the range 250°C to 300°C .

11. A method of fabricating an electronic device comprising the steps of (a) depositing $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ onto a substrate by a method according to any one of Claims 1 to 10; and (b) connecting at least two electrodes to the $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$.

12. A method of fabricating an electronic device according to Claim 11 wherein the method further comprises the step of doping the $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$.

13. A method of fabricating an electronic device according to Claim 11 wherein method comprises the further step of doping the $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ material in such a manner that a p-n junction is formed.

14. A method of fabricating a device according to one of Claims 11 or 12 wherein the method further comprises the step of growing a passivating layer of CdTe on the $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$.

15. A device obtainable by a method according to one of Claims 11 to 14.

16. An infrared detector comprising an array of devices, each device being obtainable by a method according to one of Claims 11 to 14.

17. $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ obtainable by a method according to one of Claims 1 to 10.

18. A method for the preparation of isopropylallyltelluride comprising the steps: (a) reacting a compound isopropyl lithium with Te, thereby producing isopropyl lithiumtelluride; and (b) reacting the isopropyl lithiumtelluride, produced by step (a), with allyl bromide.